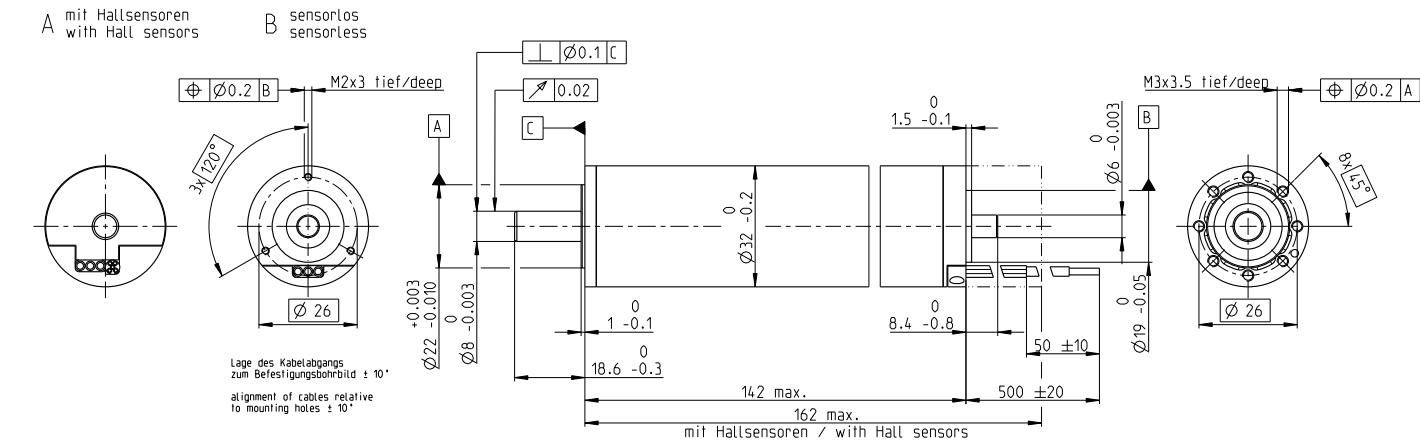


EC-4pole 32 Ø32 mm, brushless, 480 watt
Heavy Duty – for applications in oil



EC-4pole

M 1:2

- Stock program
Standard program
Special program (on request)

Part numbers				
A with Hall sensors	397799			
B sensorless	397800			

Motor data (provisional)					
Values at nominal voltage and ambient temperature °C		25	100	150	200
1 Nominal voltage	V	48	48	48	48
2 No load speed	rpm	6420	6630	6750	6860
3 No load current	mA	482	222	212	216
4 Nominal speed ¹	rpm	4670	4420	4700	5340
5 Nominal torque ¹	mNm	804	762	596	379
6 Nominal current (max. continuous current)	A	11.4	10.9	8.75	5.78
7 Stall torque	mNm	3350	2520	2150	1860
8 Stall current	A	47.5	36.7	31.9	28.1
9 Max. efficiency	%	82	85	85	84
Characteristics					
10 Terminal resistance phase to phase	Ω	1.01	1.31	1.51	1.71
11 Terminal inductance phase to phase	mH	0.298	0.298	0.298	0.298
12 Torque constant	mNm/A	70.5	68.7	67.4	66.2
13 Speed constant	rpm/V	135	139	142	144
14 Speed / torque gradient	rpm/mNm	1.94	2.65	3.16	3.71
15 Mechanical time constant	ms	2.85	3.88	4.64	5.45
16 Rotor inertia	gcm ²	140	140	140	140

¹Values for operation in thermal equilibrium.

Specifications	Operating range	Comments
Thermal data	n [rpm]	TA = 25°C
17 Thermal resistance housing-ambient		Continuous operation
18 Thermal resistance winding-housing		In observation of above listed thermal resistance (lines 17 and 18) and above listed ambient temperature, the maximum permissible winding temperature will be reached during continuous operation = thermal limit.
19 Thermal time constant winding		TA = 100°C
20 Thermal time constant motor		TA = 150°C
21 Ambient temperature [*]		TA = 200°C
22 Max. winding temperature		
Mechanical data (preloaded ball bearings)	M [mNm]	Short term operation
23 Max. speed		The motor may be briefly overloaded (recurring).
24 Axial play at axial load < 20 N		Assigned power rating
24 Axial play at axial load > 20 N		
25 Radial play		
26 Max. axial load (dynamic)		
27 Max. force for press fits (static) (static, shaft supported)		
28 Max. radial load, 5 mm from flange		

Other specifications	Application	Notice
29 Number of pole pairs	General	This motor contains leaded solder. It therefore does not fulfill the requirements for the permitted maximum concentration of hazardous substances in accordance with the EC directive 2011/65/EC (RoHS) for all applications. The motor may therefore only be used for devices that are not subject to this directive.
30 Number of phases	- extreme temperature applications	
31 Weight of motor	- vibration tested (according to MIL-STD810F/Jan2000 Fig. 514.5C-10)	
	- operation in oil and high pressure (only minimal lubrication, therefore use under rated ambient conditions is not suggested)	Reference medium: Shell Tellus oil T32 Operation in oil of different viscosity will affect the motor data.
Connection A, motor cable PTFE (AWG 14)	Oil & Gas Industry	
red Motor winding 1	- oil, gas and geothermal wells	
black Motor winding 2		
white Motor winding 3		
Connection A, sensors cable PTFE (AWG 24)		
green V _{Hall} 4.5...24 V		
blue GND		
red Hall sensor 1		
black Hall sensor 2		
white Hall sensor 3		
Connection B, motor cable PTFE (AWG 14)		
red Motor winding 1		
black Motor winding 2		
white Motor winding 3		
Wiring diagram for Hall sensors see p. 67		

Modular system	Details on catalog page 52	*The Hall sensors in this motor are rated for ambient temperatures up to 150°C. The motor with Hall sensors is fully tested at 200°C in the final inspection. Nevertheless, the Hall sensors may temporarily fail below 200°C under certain conditions.
Gear	434_GP 32 HD 442_GP 42 HD	